The Commercial Space Launch Industry

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Senator Bill Frist, Chairman

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Senator Frist, members of the committee. Good afternoon.

I am Gale Schluter, Vice President & General Manager of Boeing Expendable Launch Systems. We provide launch services to U. S. Government and commercial enterprises. We are best known for the Delta launch vehicles, which have launched the majority of US civil satellites... launching more than 250 Deltas since 1960. In the late 1980's we developed Delta II as launcher for the Air Force's Global Positioning Satellites (GPS) constellation. Delta II is a major player in the launch of commercial communications satellites, including those for Iridium and Globalstar. In addition, Delta continues to serve as the workhorse for NASA science missions, including the recent Mars Orbiter and Mars Lander missions, Stardust and Landsat.

It is an honor for me to be before you today to testify on the subject of the state of the commercial space launch industry and the potential barriers that it currently faces. I also want to commend this committee for its introduction of S. 832, which offers a ten-year extension of indemnification provisions of the Commercial Space Launch Act. This is critical to level the playing field with our international competition in the space launch arena.

Today's Delta II carries over 4,000 lb to Geosynchronous Transfer Orbit (GTO).

Delta III is capable of 8400 lb to GTO (over twice the Delta II performance). The Delta III was developed completely by our company's own investment – there was no federal funding involved in the development.

In 2001, Boeing will introduce the Delta IV family of launch vehicles that will provide a cost effective launch service for both United States Government (USG) and commercial customers. The capability of the Delta IV family ranges from 4,000 lb to 29,000 lb to Geosynchronous Transfer Orbit. Delta IV has been developed as part of the Air Force's Evolved Expendable Launch Vehicle (EELV) program and financed by both government and significant private investment.

In short, Boeing has been in the launch business a long time. With that said, the business is changing dramatically.

The demand for launches has seen an immense growth from the early 1990's. In 1989, Boeing launched its first commercial satellite. In 1994 the space launch market was approximately $3B per year, evenly split between USG and commercial launches. In 2002 we expect the market to reach over $5B with commercial launches outnumbering US government launches by 2 to 1.

Both the US government and US industry are responding. As a result of the Air

Force's EELV program and its unique approach to leverage commercial practices, both Boeing and Lockheed Martin will introduce new families of vehicles in 2001 designed to meet market demand and regain market share. In addition, US led partnerships such as Sea Launch, have come to market. But so, too, have Ariane 5 and launchers from Russia, China and Japan as the competitive race continues.

There are a number of issues that can be addressed that will keep the US launch industry at the forefront. Below are several proposals that we at The Boeing Company believe would facilitate a more competitive US launch industry:

I. Allocation of Risks

Extension of the Commercial Space Launch Act's sharing of risk or indemnification provision, which expires at the end of this year, is the industry's most important issue. Failure to extend the provision will cause an increase in launch costs and create uncertainty in the availability of liability insurance. I want to commend the several members of this committee who have sponsored S. 832, which would extend this provision for 10 years.

II. Launch Infrastructure Modernization

The United States' space launch infrastructure is in dire need of modernization in the areas of improvements in facilities, communications capability, and range control to meet the increasing commercial demand for launch capacity. The Air Force has developed a modernization plan that has slipped its completion to 2006. To meet the peak of commercial launching, this should be accelerated to complete by at least 2003.

0 Technology Investments

Risk reduction through investments in technology development leads directly to advances in space launch capabilities and reduces cost of access to space. High-risk technology development should be funded by the government and made available to the entire industry. We applaud this committee in its increased funding of $150 million for NASA's Advanced Space Transportation initiatives in the NASA Authorization for FY 2000.

0 Update of the Commercial Space Launch Act (CSLA)

As a longer term objective, the CSLA should be updated. It is inadequate in scope and implementing language to effectively promote the US commercial space launch industry. Provisions, such as the definition of excess launch property and the allocation of direct and indirect costs are a couple of examples of areas that should be updated to make a more effective and competitive US launch industry.

Solutions Boeing is Considering

As mentioned above Boeing is responding to competitive pressures by developing the Delta IV family of vehicles. This effort done in partnership with the USAF will lead to reduced costs for both the USG and commercial launch customer.

While addressing the statutory and facility related issues of the current ELV industry is important, we at Boeing see reusable launch vehicles as the long-term solution to space access and the true means to realize the potential of space-enabled telecommunication solutions.

NASA and its industry partners have taken the lead via the X-33, X-34 and Future X programs in demonstrating cutting edge technologies. I want to commend your committee for taking leadership in legislating the indemnification and cross-waivers necessary for the testing of the X-33 and the X-34 launch vehicles. Similar indemnification and cross waiver protection is also going to be necessary for the X-37 program. As these programs move beyond their government funded technology demonstration phases, it will be up to industry to apply the technologies to commercially viable systems designed to address market demands.

Summary

It is clear that a robust U.S. Space Launch Industry supports both the economic security and national security of this nation. For the reasons stated above, we are enthusiastic about the direction the commercial space launch market is taking, while at the same time we are encountering increasing competition with substantial uncertainties which will affect market growth in the coming years. As such, it is more important than ever to have stable and predictable space policy, specifically in the areas related to allocation of risk, continued access to government supported launch sites, and support of the commercial launch service industry.